

Marital Status & Risk Behaviors Among U.S. Soldiers

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ABSTRACT

Mirroring the civilian literature, military research has shown that married individuals tend to engage in fewer health risk behaviors, such as substance misuse, compared to individuals who were not married. These findings are consistent with the extensive civilian research literature documenting the physical and mental health advantage of being married, especially for men. However, few military studies have examined the relationship between marital status and other risk behaviors such as reckless driving.

Using cross-sectional data collected from U.S. soldiers (n=2,588) six months after Iraq and Afghanistan deployments, six self-reported risk behaviors are assessed: driving under the influence of alcohol, using alcohol to sleep or calm down, riding with an alcohol-impaired driver, non-seat belt use while driving, reckless driving, and risky sexual behavior. The prevalence of these behaviors is reported for three marital status groups: currently married, never married, and previously married (separated/widowed/divorced). The associations between marital status and the risk behaviors are also examined with logistic regression analyses adjusting for combat exposure, mental health problems, alcohol misuse, gender, education, rank, number of children supported financially, and service type. In these analyses, never married and previously married soldiers are compared to married soldiers.

Findings show that for all six risk behaviors, prevalence rates were highest in either the never married or the previously married group. For one of the outcomes (driving with an alcohol-impaired driver), the prevalence rate was identical in both the never and previously married groups. The logistic regression analyses revealed that for three of the six risk behaviors (driving after having several drinks, riding with an impaired driver, and risky sexual behavior) both the never married and previously married soldiers were more likely than the married soldiers to engage in the behaviors. However, for two of the risk behaviors (using alcohol to sleep or calm down, and reckless driving) neither of the non-married groups of soldiers was more likely than the married soldiers were to exhibit the behavior. Lastly, only never married soldiers had a greater likelihood of driving without a seatbelt compared to married soldiers.

The findings indicate that marital status is an important variable for understanding risk behavior among military populations; not all soldiers are at equal risk for engaging in harmful behaviors. Programs aimed at reducing risk behaviors should consider these findings in their design.

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14. ABSTRACT

Mirroring the civilian literature, military research has shown that married individuals tend to engage in fewer health risk behaviors, such as substance misuse, compared to individuals who were not married. These findings are consistent with the extensive civilian research literature documenting the physical and mental health advantage of being married, especially for men. However, few military studies have examined the relationship between marital status and other risk behaviors such as reckless driving. Using cross-sectional data collected from U.S. soldiers (n=2,588) six months after Iraq and Afghanistan deployments, six self-reported risk behaviors are assessed: driving under the influence of alcohol, using alcohol to sleep or calm down, riding with an alcohol-impaired driver, non-seat belt use while driving, reckless driving, and risky sexual behavior. The prevalence of these behaviors is reported for three marital status groups: currently married, never married, and previously married (separated/widowed/divorced). The associations between marital status and the risk behaviors are also examined with logistic regression analyses adjusting for combat exposure, mental health problems, alcohol misuse, gender, education, rank, number of children supported financially, and service type. In these analyses, never married and previously married soldiers are compared to married soldiers. Findings show that for all six risk behaviors, prevalence rates were highest in either the never married or the previously married group. For one of the outcomes (driving with an alcohol-impaired driver), the prevalence rate was identical in both the never and previously married groups. The logistic regression analyses revealed that for three of the six risk behaviors (driving after having several drinks, riding with an impaired driver, and risky sexual behavior) both the never married and previously married soldiers were more likely than the married soldiers to engage in the behaviors. However, for two of the risk behaviors (using alcohol to sleep or calm down, and reckless driving) neither of the non-married groups of soldiers was more likely than the married soldiers were to exhibit the behavior. Lastly, only never married soldiers had a greater likelihood of driving without a seatbelt compared to married soldiers. The findings indicate that marital status is an important variable for understanding risk behavior among military populations; not all soldiers are at equal risk for engaging in harmful behaviors. Programs aimed at reducing risk behaviors should consider these findings in their design.

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1.0 INTRODUCTION

Studies of United States (U.S.) civilians have typically shown that married individuals have better physical and psychological health compared to individuals in other marital status groups. This is particularly so when married individuals are compared to widowed, divorced, or separated individuals (Liu & Umberson, 2008), which may reflect the strains of marital dissolution (Williams & Umberson, 2004). The health advantage of the married has been attributed to a variety of reasons including the economic benefits, health regulation, and the social support provided by marriage (social causation hypothesis) (Bierman, Fazio, & Milkie, 2006; Musick, Bumpass, & 2010; Stutzer & Frey, 2006; Wade & Pevalin, 2004; Waldron, Hughes, & Brooks, 1996). Another explanation is that people who get married are healthier than those who do not (social selection hypothesis) (Stutzer & Frey, 2006; Wade & Pevalin, 2004). Married individuals also appear less likely to engage in risk behaviors such as substance misuse (Kessler, Berglund, Demler, Jin, & Merikangas, 2005; Simon, 2002); similar findings have been documented among military service members (Riviere & Merrill, 2011). This health advantage has been much less studied in U.S. military populations. Further, it is unclear from both the civilian and military literatures whether the marriage health advantage extends to lower risk behavior prevalence, apart from lower substance misuse, among married individuals.

The limited information known about marital status and risk behaviors (apart from substance misuse) among military personnel comes from one study in the United Kingdom (U.K.) of regular (active component) service members and one U.S. study of treatment-seeking veterans. The first study showed that separated, divorced, and widowed (but not single) service members were more likely than married/cohabiting service members to be risky drivers (not wearing a seatbelt and/or speeding; Fear et al., 2008). The latter study (Kuhn, Drescher, Ruzek, & Rosen, 2010), which seemed to have used a binary marital status variable (married vs. unmarried), had contrary findings to the U.K. study. These authors found that married veterans were more likely to drive aggressively; although they were not statistically more or less likely to drive after substance use or to use seatbelts infrequently.

No military study was found that examined the independent association of marital status with risk behaviors after adjusting for combat exposure, alcohol misuse, mental health problems, and demographic variables among service members. This study will explore such relationships among U.S. soldiers who had deployed to Iraq or Afghanistan.

2.0 BACKGROUND

2.1 Risk-Taking Behaviors

Risk or risk-taking behaviors can be defined as either socially sanctioned (skydiving) or generally unsanctioned (drinking and driving) volitional actions that may result in morbidity and mortality (Cooper et al., 2008; Fear et al., 2008; Jessor, 1991; Turner, McClure, & Pirozzo, 2004; Williams, Bell, & Amoroso, 2002). The overwhelming focus of previous research, as it is here, has been on socially unsanctioned behaviors. Risk behaviors are important to examine because not only do they co-vary with mental health and substance use problems, they have implications for reduced occupational and social functioning, morbidity, and mortality. Further, risk behaviors co-occur in individuals (Cooper, et al., 2008; Fear, et al., 2008; Williams, et al., 2002), which suggests that there may be high risk sub-groups that deserve more research and intervention focus.

The focus of this study is on the association between marital status and risk behaviors. However, the association of the two is perhaps more complex among military personnel who have deployed to combat

theatres. Multivariate models need to include measures of combat exposure, mental health problems, and alcohol misuse. These variables are also related to each other, which we will briefly explore below.

2.2 Deployments, Combat Exposure, and Risk Behavior

Few studies have examined the relationships between deployments and combat exposure with risk-taking behaviors. A U.S. study of Gulf War era veterans (Hooper et al., 2006) found that deployment experience was associated with a greater likelihood of a fatal motor vehicle crash, which is not a risky driving behavior, but is certainly correlated with such behaviors. A later study of regular U.K. service members who had deployed to the Iraq War found that those who had combat roles and more combat exposure were more likely to engage in two risky driving behaviors – not using a seatbelt and speeding (Fear, et al., 2008). The positive relationship between combat exposure and risk behavior has been corroborated in a study of U.S. soldiers who had deployed to Iraq or Afghanistan (Riviere, Merrill, Wilk, Edens, & Adler, 2010). However, one study found a negative relationship between one combat experience (having a buddy who was killed or injured) and one risk behavior (a combination of driving after having several drinks or riding with a driver who had too much to drink (Killgore et al., 2008).

It not clear whether deployment or combat experiences may engender a state-related greater tendency to engage in risky behaviors even in the months following exposure (Killgore, Vo, Castro, & Hoge, 2006) or whether any relationship between level of combat exposure and risk behaviors can be accounted for by pre-deployment personality traits (such as impulsivity or sensation-seeking) of service members who choose to serve in combat roles (McLeod et al., 2001). Some findings do indicate that risky driving behaviors (Fear, et al., 2008) and fatal motor vehicle accidents (Hooper, et al., 2006) are higher in service members who had combat roles, which may support the latter explanation.

2.2.1 Mental Health Problems, Alcohol Use, and Risk Behavior

The relationship between combat exposure and risk behaviors may be not be a direct one; mental health problems and alcohol misuse/abuse may, individually or in combination, explain relationships between the two. The association of combat exposure with mental health problems has been well documented among U.S. service members who had deployed to the current wars in Afghanistan and Iraq (Hoge et al., 2004; Smith et al., 2008; Thomas et al., 2010). PTSD is one such mental health problem and studies of U.K. service members, and of U.S. treatment-seeking military samples have found that service members who reported having PTSD symptoms were more likely to engage in risky driving behaviors (Fear, et al., 2008; Kuhn, et al., 2010; Sayer et al., 2010). Increased alcohol misuse, which is often cormorbid with mental health problems, is another sequela of combat deployments. Studies from both the U.K. (Fear, et al., 2008; Hooper et al., 2008) and the U.S. (Bray et al., 2010; Jacobson et al., 2008; Wilk et al., 2010) of service members have demonstrated that alcohol misuse is significantly higher among those who deployed to the current wars, and experienced combat. In turn, alcohol misuse has been implicated in a number of risk behaviors. U.S. Department of Defense studies with large samples of military personnel have confirmed the positive relationship between alcohol consumption and non-use of seatbelts, speeding, and risky sexual behavior (Thompson, Kao, & Thomas, 2005; Williams, et al., 2002).

2.2.2 Present Study

Generally, the findings above indicate that service members who have deployed and/or been exposed to combat, who have mental health problems, and who misuse alcohol are more likely to engage in risk behaviors. Previous research has demonstrated that while soldiers in the three marital groups examined have

comparable levels of combat exposure, previously married soldiers are more likely to screen positive for depression, anxiety, and PTSD and that never and previously married soldiers are more likely to screen positive for alcohol misuse (Riviere & Merrill, 2011), which is consistent with much research that have established that individuals' well-being vary based on their social group memberships (Thoits, 2010). The limited findings regarding the relationship between marital status and risk behaviors in service members are equivocal. Further, no single study was found that examined this association with adjustments for combat exposure, alcohol misuse, and mental health problems. This is the aim of the current study.

3.0 METHODS

This study examines whether two groups of soldiers – never married and previously married – are more likely to engage in risky behaviors compared to married soldiers. Previously married soldiers include separated, divorced, and widowed soldiers. This is an exploratory examination, but we expect that soldiers who report either being currently separated, divorced, or widowed (previously married) or who have never been married will be more likely than married soldiers to engage in risk behaviors. In other words, we expected marital status to be independently associated with individual risk behaviors after adjusting for combat exposure, mental health problems, and alcohol misuse.

3.1 Sample

Data were collected in 2008 and 2009 at approximately 6 months after soldiers from brigade combat teams returned from deployments to Afghanistan and Iraq. Soldiers were recruited through coordination with unit commanders. Recruitment briefings, which included a description of the study, its voluntary nature, informed consent procedures and how anonymity and confidentiality would be protected, were provided to large groups of soldiers. Fifty-six percent of soldiers from participating units were present during the recruitment briefings. Soldiers unable to attend the recruitment session had other work-related duties or were on leave, ill, or on temporary duty elsewhere. Overall, 85% of the soldiers attending the recruitment session gave their consent for study inclusion ($n=3,380$). From this sample, we selected the soldiers who reported that they had deployed to either Iraq or Afghanistan and who had reported exposure to at least one combat experience ($n=2,588$).

3.2 Measures

Six self-reported *risk behaviors* were assessed with seven different questions. Three questions were asked with temporal reference to the past month (“In the past month did you...”): “drive after having several drinks?”, “did you ride with a driver who had too much to drink?”, and a combination of two items “have you used alcohol to get to sleep” and “have you used alcohol to calm down?”. Three questions were asked with temporal reference to the past three months (“In the past 3 months have you...”): “driven a car or motorcycle recklessly?”, “drove or rode in a car without using a seatbelt?”, and “risked getting a sexually transmitted disease (STD; e.g. had sex with multiple partners, or did not use a condom?”. Respondents were asked to answer either yes or no to all six questions.

Combat exposure was measured using 33 items from the Combat Experiences Scale (CES) that has been used in similar samples (Hoge, et al., 2004; Riviere, Kendall-Robbins, McGurk, Castro, & Hoge, 2011). Respondents were asked to indicate how often they had experienced the items from never (0) to five or more times (3) during their most recent deployment. Total scores could range between 0 and 99.

Mental health problems is a composite variable measuring whether respondents met criteria for either depression, anxiety, or PTSD (Hoge, et al., 2004). Depression was measured with the PHQ-9 (Kroenke &

Spitzer, 2002). To meet screening criteria for depression, respondents had to endorse at least 5 symptoms, including “feeling down, depressed or hopeless” or “having little interest in doing things” for more than half the days in the past month and indicate impairment in work, at home or in interpersonal functioning at the “very difficult” or “extremely difficult” level. Anxiety was measured with seven items from the Generalized Anxiety Disorder–7 (GAD-7; (Spitzer, Kroenke, Williams, & Lowe, 2006). As reported in a previous study (Kim, Britt, Klocko, Riviere, & Adler, 2011) items were summed and respondents who had a sum of 10 or greater and who indicated home or interpersonal functioning difficulties (as with depression) met criteria for anxiety. PTSD was measured using the 17-item PTSD Checklist (PCL; (Weathers, Litz, Herman, Huska, & Keane, 1993). To meet screening criteria for PTSD, respondents not only had to report at least one intrusion, three avoidance and two hyperarousal symptoms, but also have a score of at least 50 on a scale of 17 to 85 (Hoge, et al., 2004; Riviere, et al., 2011).

Alcohol misuse. Soldiers were asked two questions about their past month alcohol use using a modified version of the Two-Item Conjoint Screen for Alcohol (TICS; Brown et al., 2001). The modified TICS is a validated measure widely used in post-deployment screening (Milliken, Auchterlonie, & Hoge, 2007). An endorsement of either item (“have you felt that you wanted or needed to cut down on your drinking?”, “have you used alcohol more than you meant to?”) was considered a positive screen (Santiago et al., 2010; Wilk, et al., 2010).

Demographic covariates included age (18-24, 25-29, ≥ 30), gender, rank (junior enlisted, non-commissioned officers (NCOs), officers/warrant officers), education (\leq high school diploma, some college/2 yr degree, \geq bachelor’s degree), number of children supported financially, and service type (combat arms/maneuver or combat support/service support).

3.3 Analyses

All analyses were performed with SPSS software (Version 17.0) for Windows. We used chi-square analyses to assess the bivariate association between marital status and risk behavior prevalence. Separate logistic regression models were estimated for each of the six risk behaviors adjusting for combat exposure, mental health risk, alcohol misuse and demographic variables. We first examine the unadjusted relationship between marital status and the risk behavior. In the two subsequent models, we first entered the demographic variables, and then the combat exposure, mental health problems, and alcohol misuse measures.

4.0 RESULTS

Table 1 displays the demographic distribution and means for the overall sample and the three marital status groups. Married and previously married soldiers are comparable in terms of age, while the never married group is, as expected, younger. The previously married group has the greatest percentage of female soldiers compared to the other two marital status groups. Only about 10% of the soldiers in each group had a bachelor’s or higher degree of education. In terms of rank, over 70% of the soldiers in the never married group were in the junior enlisted rank, whereas for the other two marital status groups, the majority of the soldiers were fairly evenly spread over both junior enlisted and NCO ranks. About two-thirds of the soldiers in all three marital status groups indicated their service type was combat arms/maneuver. The never married soldiers had the lowest mean number of children they supported financially. Mean levels of combat exposure were comparable across the groups. The currently married had the lowest prevalence of alcohol misuse (18%), followed by the previously married (22%), and then the never married (27%). Mental health problem (depression, anxiety, or PTSD) prevalence was highest in the previously married (22%) and lowest in the never married (15%).

The prevalence rates for the risk behaviors are displayed in Table 2. Across all six risk behaviors, prevalence rates were lowest in the currently married soldiers; the other groups had similar prevalence rates. Prevalence was highest for three behaviors in the never married group (used alcohol to sleep or calm down [33%], driven a car or motorcycle recklessly [10%], and risked getting an STD [20%]). The previously married group had the highest prevalence in two behaviors (driving after several drinks [13%], and driving/riding without a seatbelt [20%]). The prevalence of riding with a driver who had drunk too much was identical in both unmarried groups (10%). Chi-square analyses of the association of marital status with the risk behaviors were all significant, except for the association with driving recklessly.

Table 3 displays the multivariate associations of marital status with the risk behaviors. For three of the behaviors (driving after several drinks, riding with an impaired driver, and risking getting an STD), while the values of the odds-ratios were slightly different across the unadjusted and adjusted models, the relationships between marital status and the behaviors were unchanged. Both the never married and the previously married groups of soldiers were more likely to engage in these behaviors. Odds-ratios (OR) in the final models were highest for risky sexual behavior. Both the never and the previously married soldiers were five times more likely than married soldiers to have risked getting an STD. The statistically significant unadjusted greater odds of never married for using alcohol as a sedative or for not using a seatbelt did not hold in the final models. Neither of the unmarried groups of soldiers had increased odds of using alcohol to sleep or calm down compared to the married group while previously married soldiers had statistically significant greater odds than married soldiers of driving/riding without a seatbelt (OR=2.19, confidence interval (CI)=1.32, 3.62). Both the never and the previously married soldiers were more likely to drive after several drinks than married soldiers (OR=1.64 and 2.17 respectively). There were no statistically significant differences between never married or the previously married group compared to the currently married group for the reckless driving risk behavior. Overall, unlike what the bivariate relationships between marital status and the risk behaviors suggested, the multivariate associations indicate that the previously married had greater odds of engaging in four of the six risk behaviors compared to the married group. In contrast, the never married group had greater odds for three of the six behaviors.

5.0 DISCUSSION

This study examined the association of marital status with six risk behaviors. Specially, we examined whether never and previously married soldiers were more likely than married soldiers to engage in the risk behaviors. Overall, our results indicated, consistent with our expectations, that both groups of unmarried soldiers were more likely to engage in the risk behaviors than the married soldiers. These results are consistent with the consensus of previous studies (Liu & Umberson, 2008; Musick, et al., 2010; Simon, 2002; Waldron, et al., 1996) that married individuals have a health advantage over individuals in other marital status groups.

The findings are even more notable given that the multivariate analysis not only adjusted for demographic variables, but also for combat exposure, alcohol misuse, and mental health problems, which several studies have shown to be associated with risk behaviors (Fear, et al., 2008; Jacobson, et al., 2008; Kuhn, et al., 2010; Sayer, et al., 2010). The findings indicate that marital status is an important variable for understanding risk behavior among military populations in that not all soldiers are at equal risk for engaging in harmful behaviors.

The greater likelihoods of certain risk behaviors of previously deployed soldiers could indicate that they were still transitioning from a combat environment where such behaviors as not using seatbelt driving were a response to the demands of combat (Okpala, Ward, & Bhullar, 2007). However, increased risk behavior such as drinking and driving, and risky sexual behavior cannot be similarly explained.

Decades of research of the association of stress and health have shown that individuals of particular social statuses such as the previously married have higher rates of physical and mental health problems, including alcohol and substance use disorders. The poorer well-being of such individuals have been principally explained by their greater stress exposure (Thoits, 2010). For military samples such as the one used in this study, combat exposure is the most obvious stressor. Such exposure involves the possibility of death, which has been associated with elevated risk behaviors (Ben-Zur & Zeidner, 2009), which may be due a state-related increased risk-taking propensity (Killgore, et al., 2006). Risk taking propensity appears to be greater among soldiers who had higher levels of combat exposure (Killgore, et al., 2008; Mitra-Sarkar & Andreas, 2009). However, this study showed that traumatic combat exposure was comparable in the three study groups. What may be different among the study groups are coping resources such as social support, which previous studies have found to be lower in unmarried individuals (Thoits, 2010). Congruent with the social causation hypothesis, the health advantage of married soldiers found in this study may reflect benefits of marriage (or probably other stable intimate relationships) such as social support that mitigates the effects of stress exposure. However, the social selection hypotheses that the apparent health benefits of marriage merely reflect that healthier individuals are more likely to get married cannot be dismissed.

Two other explanations might be useful for explaining the greater likelihood of unmarried individuals to engage in risk behaviors: crisis theory and personality traits. Crisis theory posits that the poorer functioning of previously married individuals is evidence of the temporary strain of marital status transition (Johnson & Wu, 2002). This suggests that the higher prevalence of risk behaviors among previously married soldiers is unlikely to persist. This study's data limits testing of this theory, but it is a plausible explanation for the greater risk behavior prevalence of previously married soldiers compared to married ones.

We have alluded to the state-like aspect of risk-taking propensity, but several studies have focused on personality traits (Llewellyn, 2008) like risk-taking propensity and invincibility. Among U.S. service members, both risk-taking propensity (Killgore, et al., 2006) and perception of invincibility (i.e. invulnerability to harm or injury) (Killgore, 2010) have been associated with risk-taking behavior. This explanation appears to be compatible with the social selection hypothesis. Perhaps the individuals with the greatest risk-taking propensity are either unlikely to get married or if they do get married are unlikely to remain in that status.

While the explanations for the greater risk behaviors among unmarried individuals are valuable for contextualizing our findings, the lack of longitudinal data limits more conclusive statements about why both never and previously married soldiers are more likely than married soldiers to engage in risk behaviors. More specifically, our data did not allow us to explore pre-combat levels of risk behaviors, which would have been useful in assessing whether marital status was differently associated with the risk behaviors prior to and after combat deployments.

Additionally, we have no data on the timing of marital status transitions among the previously married soldiers to examine whether the higher risk behavior prevalence in this group of soldiers was temporary. Also, no measures were included on personality traits such as risk-taking propensity or invincibility, which prevents marital status group comparisons of these characteristics. Lastly, our marital status measure does not allow disaggregation of the never married group, which may have included soldiers in cohabiting relationships or in other stable relationships. However, cohabiting may be rare among military service members because of the institutional incentives to marry (Riviere & Merrill, 2011).

Notwithstanding its limitations, the results of this study clearly show that risk behavior prevalence is not equally distributed among soldiers. Unmarried soldiers, particularly those who were previously married, are

at more likely to engage in such behaviors. Risk behaviors have implications not only for impaired functioning, morbidity, and mortality in soldiers, but in family members and others (for example, a pedestrian may be injured or killed by a soldier's drunk driving). Countermeasures to curb risk-behaviors should consider such findings in their design.

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Table 1: Demographic and Other Characteristics of the Sample.

Characteristic	Overall (N=2588)		Currently Married (N=1395)		Never Married (N=748)		Separated, Widowed or Divorced (N=338)	
	N	%	N	%	N	%	N	%
Age								
18-24	1035	41.8	443	31.8	473	63.4	119	35.2
25-29	744	30.0	438	31.4	200	26.8	106	31.4
30-39	565	22.8	412	29.6	62	1.5	91	26.9
≥40	133	5.4	100	7.2	11	17.8	22	20.1
Gender								
Male	2248	91.4	1296	93.8	664	89.4	288	85.7
Female	212	8.6	85	6.2	79	10.6	48	14.3
Educational status								
≤HS diploma	1216	49.5	661	47.8	403	54.5	152	45.4
Some college/2yr deg	1006	40.9	579	41.8	260	35.2	167	49.9
≥Bachelors degree	236	9.6	144	11.4	76	10.2	16	4.8
Rank								
Junior Enlisted	1336	54.3	638	46.0	533	72.0	165	49.4
NCOs	962	39.1	650	46.9	151	20.4	161	48.2
Officer/Warrant Officer	163	6.6	99	7.1	56	7.6	8	2.4
Service Type								
Combat support/service support	785	32.0	443	32.1	212	28.8	130	38.7
Combat arms/maneuver	1667	68.0	936	67.9	525	71.2	206	61.3
Alcohol misuse	517	21.1	241	17.5	195	26.5	81	21.5
Mental health problem	420	16.9	234	16.8	113	15.1	73	21.6
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
No. of children supported financially	1.10	1.36	1.55	1.45	0.21	0.63	1.14	1.17
Combat exposure	23.32	17.94	23.15	17.85	23.27	18.04	24.13	18.12

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Table 2: Risk Behavior Prevalence by Marital Status.

Risk Behaviors	Overall		Currently Married		Never Married		Separated, Widowed or Divorced		Test Statistic
	(N=2588)		(N=1395)		(N=748)		(N=338)		
	N	%	N	%	N	%	N	%	
Drive after several drinks	195	8.0	74	5.4	77	10.5	44	13.3	$\chi^2(2) = 31.93^c$
Used alcohol to sleep or calm down	699	28.6	350	25.4	244	33.2	105	31.7	$\chi^2(2) = 16.14^c$
Rode with a driver who had too much to drink	164	6.7	57	4.1	74	10.0	33	9.9	$\chi^2(2) = 33.32^c$
Driven recklessly	204	8.3	103	7.4	73	9.9	28	8.4	$\chi^2(2) = 3.77$
Drove or rode without seatbelt	391	15.9	181	13.1	143	19.3	67	20.2	$\chi^2(2) = 19.18^c$
Risked getting a STD	248	10.1	47	3.4	144	19.5	57	17.3	$\chi^2(2) = 157.96^c$

^a $p < .05$

^b $p < .01$

^c $p < .001$

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Table 3: Multivariate Relationships between Marital Status and Alcohol-impaired Driving, Use of Alcohol to Sleep or Calm Down, Riding with an Alcohol-Impaired Driver, Reckless Driving, Non-Seatbelt Use, and Risky Sexual Behavior.

Risk Behaviors	Marital Status Groups ^a					
	Never Married			Previously married		
	OR ^b (CI)	AOR ^c (CI)	AOR ^d (CI)	OR ^b (CI)	AOR ^c (CI)	AOR ^d (CI)
Drive after several drinks	2.07 (1.41-2.88)***	1.89 (1.27-2.79)**	1.64 (1.08-2.50)*	2.71 (1.83-4.02)***	2.59 (1.70-3.94)***	2.18 (1.37-3.45)**
Used alcohol to sleep or calm down	1.46 (1.20-1.78)***	1.23 (0.97-1.54)	1.08 (0.83-1.40)	1.37 (1.05-1.78)*	1.33 (1.01-1.75)*	1.13 (0.82-1.55)
Rode with a driver who had too much to drink	2.59 (1.81-3.71)***	1.91 (1.26-2.90)**	1.70(1.09-2.63)*	2.56 (1.64-4.00)***	2.56 (1.60-4.11)***	2.19 (1.32-3.62)**
Driven recklessly	1.36 (1.00-1.87)	1.02 (0.71-1.47)	0.97 (0.67-1.41)	1.14 (0.74-1.77)	1.16 (0.74, 1.83)	1.04 (0.65-1.65)
Drove or rode without seatbelt	1.59 (1.25-2.02)***	1.17 (0.88-1.56)	1.14 (0.85-1.52)	1.68 (1.23-2.29)**	1.73 (1.24-2.42)**	1.61 (1.14-2.26)**
Risked getting an STD	6.86 (4.87-9.67)***	5.35 (3.60-7.95)***	5.14 (3.45-7.67)***	5.92 (3.94-8.89)***	6.22 (4.06-9.54)***	5.80 (3.76-8.95)***

Note. OR = odds ratio; AOR = adjusted odds ration; CI = confidence interval; Significant odds-ratios are shown in bold font.

^a Reference group = currently married

^b Unadjusted

^c Adjusted for age, gender, education, rank, no. of children supported financially, and service type

^d Adjusted for age, gender, education, rank, no. of children supported financially, service type, combat exposure, mental health problems, and alcohol misuse

* p<.05; **p<.01; ***p<.001

